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Editorial

Timing and Indications for Aortic Valve Surgery in Korean Bicuspid Aortic Valve Patients

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▸ See the article "Clinical Characteristics of Korean Patients with Bicuspid Aortic Valve Who Underwent Aortic Valve Surgery" in volume 48 on page 48.

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A bicuspid aortic valve (BAV) is the most common congenital heart valve disease and is more common in males.[1] BAV patients demonstrate various clinical courses, including a normally functioning BAV, asymptomatic aortic valve dysfunction and severe aortic valve dysfunction that requires surgery.[1)2)] Occasionally, infective endocarditis might be the first clinical manifestation in BAV patients.[1)2)] Moreover, ascending aortic dilatation, vascular dysfunction, and global aortic stiffness are cardiovascular risk factors for the future development of vascular complications or left ventricular dysfunction.[3-6)] Although BAV is likely to present with different valve phenotypes and function depending on genetic backgrounds. Insufficient data exist on the timing of and indications for aortic valve surgery in Koreans with BAV.

Sun et al.[7)] reported the results of their investigation of 1,160 adult patients with BAV who underwent aortic valve surgery from 2000–2014 at 4 tertiary medical referral centers. In this large-scale registry study, the authors clearly demonstrated when and for which indications Korean BAV patients underwent aortic valve surgery. The most important findings were that the patients were approximately 60 years old, and more than 3-quarters underwent aortic valve surgery due to aortic stenosis. In 6% of cases, infective endocarditis was the primary lesion for aortic valve surgery. In addition, the authors mentioned that the relative frequency of the type 1 phenotype (right coronary cusp-left coronary cusp fusion) was lower compared to that reported in western countries, suggesting the possibility of ethnic differences in the frequency of different BAV phenotypes.

As expected, BAV patients were characterized by distinct surgical indications according to age. In another recent single-center study of 1,073 Koreans first diagnosed with BAV, significant valve dysfunction was closely associated with age, gender and BAV phenotype.[8)] Patients with significant aortic stenosis were older and more likely to be female; they also had a higher prevalence of type 0 (4) BAV.[8)] Participants with significant aortic regurgitation were younger and more likely to be male.[8)] To sum up these findings, the prevalence of significant aortic stenosis was considerably increased in BAV patients older than 50 years of age, and aortic stenosis was the predominant type of valve dysfunction in those undergoing aortic valve surgery.

However, the results of Sun et al.'s study[7] should be cautiously interpreted. First, not all patients with BAV develop significant valve dysfunction, and there is a broad clinical spectrum in terms of patterns of valve dysfunction.[2] The purpose of this study was to evaluate the average age at and indications for aortic valve surgery in patients with severe valve dysfunction who underwent surgery at tertiary medical centers and not to evaluate the timing or indications of surgery in all BAV patients. Therefore, we cannot explain the natural history of all BAV patients, even if the mean age of and indications for aortic valve surgery were clearly shown. The proportion of female patients tended to be higher in this selective group of participants and was likely because women more commonly present with aortic stenosis. For similar reasons, the incidence of type 1 phenotypes in this study may have been lower due to the patient characteristics of those undergoing aortic valve surgery, instead of their ethnic differences. However, in a previous study of Koreans with various ranges of BAV function, the type 1 phenotype was found at a rate of approximately 60%, which is consistent with the findings of the current study.[8] Therefore, we suggest that this finding is due to racial differences.

Interest in BAV has recently grown as interventional procedures, such as transcatheter aortic valve replacement, have been extended to BAV patients. Prospective studies that have been based on a few recent results from a few large-scale BAV registries in Korea are expected to broaden the understanding of these ambiguous and diverse clinical presentations.

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